

CHAPTER

9

Publishing and Maintaining Your Web Site

When you complete this chapter, you will be able to:

- Understand the features of Internet Service Providers and what to look for when choosing one
- Use the File Transfer Protocol (FTP) to transfer files to and from your Web site
- Plan for usability testing and user feedback
- Plan for ongoing site maintenance and updates
- Use a variety of ways to enhance search engine listings of your Web site

You have done all the hard work, and now it is time to publish your Web site. Your first important decision to make is your choice of Internet Service Provider (ISP) to host your Web site. You also need to know how to transfer your files to the Web server from the computer you used to develop your Web page. After the Web site is established, you should test it with a variety of users and update or refine it as needed. Finally, you should make sure your Web site gets noticed. This chapter describes the details of publishing and maintaining a Web site.



PUBLISHING YOUR WEB SITE

To make your Web site live, you transfer your Web site files to a Web server. A **Web server** is a computer connected to the Internet and running server software. The software lets the computer use the Hypertext Transfer Protocol to serve HTML files to Web browser clients. Unless your company or organization has a Web server, you must use the services of a Web hosting provider. After you choose a server to host your files, you will need to select file transfer software and upload the Web site files from your development machine to the Web server.

CHOOSING AN INTERNET SERVICE PROVIDER

One of the most important choices you will make is your Web hosting service or **Internet Service Provider (ISP)**. This is the company that hosts your Web pages on a Web server, making them available to anyone who knows your URL. **Web hosting services** provide Web server space only, and will be more capable of hosting a complex commercial site. ISPs provide dial-up access and most offer Web server space as part of the access package. Small Web sites (around 15-20 pages of content) do not need much more than 1-2 MB of server space to hold all of the HTML pages and graphics. Your ISP should provide at least 10 MB of space so your Web page has room to grow. Larger or more complex sites need more server space, especially if you have downloadable files, archives, lots of graphic content, or databases.

Shopping for an ISP can be a confusing experience, as no two are exactly alike. Do some research and learn about offerings from different vendors. The following sections discuss the features you should seek in an ISP.

Easy Dial-Up

Choose an ISP that allows you to connect to their network by placing a local phone call. Make sure that your provider has enough Points of Presence to make dialing easy. **Points of Presence (POPs)** are dial-up access points to your service provider's network. Your service provider should have at least one POP available so you can dial a local number to access the network. Major ISPs, such as AT&T, have POPs throughout the United States. A local ISP will cover only the area that includes their subscriber base. Try to match the size of your ISP to the size of your company—a local company does not need the services of a national ISP.

You should not receive a busy signal when you dial up to get Internet access. Unfortunately, you probably will not find out about access problems until after you have become a customer. Do not hesitate to change ISPs if you are not satisfied with ease of access.

Free Utility Software

Your ISP should provide you with a **File Transfer Protocol (FTP)** application for uploading files. Some ISPs provide HTML editors and other software as well. Some of this software may be shareware, so, if you decide to keep it, remember to register with the author.

TIP

Tips for America Online (AOL) users — As a subscriber, you are allowed 10 MB of Web server space, but you cannot have your own domain name. You also may experience slower connections to the Web because so many AOL subscribers are connected during peak times. If you are spending a lot of time on the Web, subscribe to a regular dial-up account from an ISP and then access AOL using your Internet connection. AOL currently charges less for users that "BYOA" (bring your own access), because you are not using their network to access the Internet.

Accessible Technical Support

Technical support is not necessarily a feature, but it is an absolute necessity. Make sure that your ISP has competent, accessible customer service. When you are checking into ISPs, call and talk with someone in customer service. Tell them how experienced you are with computers, and let them know what you hope to accomplish (such as set up a Web site, transfer files, etc.). Time how long they keep you on hold when you are waiting to speak with customer service. Local ISPs may not have a large staff, but they also have fewer subscribers. National ISPs have so much volume that they may keep you on hold for an unacceptable length of time.

Additional E-mail Addresses

All access accounts come with at least one e-mail address, called a Post Office Protocol 3 (POP3) account. If you are part of a group, you may want an account that has more than one mailbox so that each person receives his or her own e-mail.

Personal versus Commercial Accounts

Personal ISP accounts generally are less expensive than a business account. You have less disk space, fewer features, and a more complex URL, such as *www.webserver.com/users/yourname/*. Once you buy a domain name, your ISP usually upgrades you to a commercial account. Commercial accounts pay more for their services, so make sure you receive more, such as some of the features listed below.

SQL Database Support

If you are planning on any type of electronic commerce or customized data presentation, you need database support. Databases that understand **Structured Query Language (SQL)** are the most common and most powerful type of database.

Secure Socket Layer (SSL) Support

The **Secure Socket Layer (SSL)** is an Internet communications protocol that allows encrypted transmission of data between the user and the server. SSL is necessary if you are planning on setting up an electronic commerce site or transmitting other sensitive data. Encrypting the data ensures the information cannot be read if the transmission is intercepted.

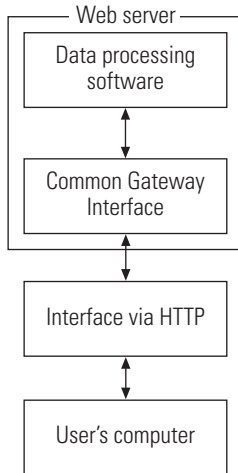
Multimedia Capabilities

Multimedia capabilities include support for RealNetworks technology (*www.real.com*), which is the current standard for streaming multimedia on the Web. If you have ever used the RealPlayer plug-in on the Web to view real-time audio or video, you have used this technology. **Streaming** is a server-based technology that transmits audio or video content in a continuous stream to the user, allowing the content to be played while it is downloading, rather than waiting to download a complete file. The success of these technologies depends on the speed and quality of the user's connection to the Internet. The user needs the correct streaming media player to view the content.

CGI Script Capabilities

The **Common Gateway Interface (CGI)** is the communications bridge between the Internet and the server. Using programs called scripts, CGI can collect data sent by a user via the Hypertext Transfer Protocol (HTTP) and transfer it to a variety of data processing programs including spreadsheets, databases, or other software running on the server. The data processing software then can work with the data and send a response back to CGI, and then onto the user, as shown in Figure 9-1.

FIGURE 9-1
*Common Gateway
Interface architecture*



The program that transfers the data is called a **CGI script**. You can write CGI scripts in a variety of programming languages. If you are not already familiar with writing CGI scripts, enlist the assistance of a programmer, unless you want to master programming skills in addition to your HTML skills.

The information the CGI script processes is collected from the user with an HTML form. Figure 9-2 shows a typical form, created with the HTML `<FORM>` elements.

The information in this form could be sent through a CGI script to a database on the server that contains customer contacts. The HTML forms interface, as shown in Figure 9-2, is easy to create. You need only the cooperation of a programmer to make your forms work for you.

FIGURE 9-2
Typical HTML form

The screenshot shows a Netscape browser window titled "Joel Sklar Consulting - Request for Information Form - Netscape". The browser's address bar shows "course Joel Sklar Cons Search STG XML Validat". The form itself is titled "Request for Information Form" and contains the following fields and elements:

- Input fields for "Name", "Company:", "Street:", "City:", "State:", "Zip:", and "Email:".
- A dropdown menu for "Approximately how many people need training?" with "1-5" selected.
- Two buttons: "Send Your Info" and "Clear the Form".
- A footer with links: [Home](#), [HTML Stuff](#), [Tour the World](#), [Webpendium](#), [Request More Info](#), [Latest Links](#), [Class Information](#), [Course Development Process](#), and [Send mail](#).

BUYING A DOMAIN NAME

If you want to see if a domain name is available, or to register your own domain name, visit Network Solutions (www.networksolutions.com). Network Solutions is the company responsible for registering .com, .net, and .org domain names. The site contains a simple form that lets you enter a domain name to see if it is already registered. If the domain name is available, you can register online. Domain names currently must be renewed every two years.

For an additional fee, your ISP often can register your Web site and provide Network Solutions with all the details, such as the server's primary and secondary Internet Protocol (IP) addresses. If you prefer, you can save the cost of doing this by filling out the online forms yourself, but you still need to contact your ISP to get the IP addresses.

ISP COMPARISON CHECKLIST

Use the following checklist when you compare ISPs.

- Is the ISP local or national?
- Does the ISP have enough local POPs in your area code?
- Is there space available on their Web server for your Web site?
- Does the ISP offer technical support? When is support staff available?
- How many email addresses do you get with an account?
- Does the ISP provide software, such as an FTP client?

- Does the ISP support the latest connection technologies? (See Chapter 1, “Bandwidth Concerns.”)
- Does the ISP offer enhanced services, such as SQL database support, Secure Socket Layer (SSL), CGI scripting, and multimedia technology?

USING THE FILE TRANSFER PROTOCOL TO UPLOAD FILES

To publish your pages on the Web, you must send your HTML code, image, and other files to the Web server. To do this, you need File Transfer Protocol (FTP) software, often called an FTP client. Some HTML authoring software, such as Microsoft FrontPage 2000 and Macromedia Dreamweaver, include built-in software packages that let you upload files to your Web server if your ISP supports these features. You also can choose from many shareware FTP programs to upload your files. Visit your favorite shareware site, such as CNET Shareware.com, and search for FTP clients. Figures 9-3 and 9-4 are from the WS_FTP32 application developed by Ipswitch Software, but most FTP clients work on the same principles.

When you have decided which FTP software to use, contact your ISP's customer service department and ask for the correct FTP address for the Web server. You also need your account name and password, which in most cases will automatically point your FTP program to the proper directory on the server.

To upload your files, start your FTP program and connect to your Web server using the FTP information provided by your service provider. Your password allows you write access to your directory on the Web server. Figure 9-3 shows a screen with the FTP connection settings for a particular Web server.

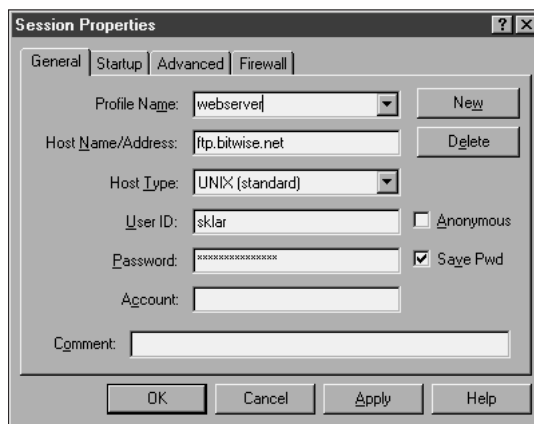
TIP

Backing up your files

Always keep a backup of your Web site files in case you have any problems during FTP transmissions, or if you accidentally delete or overwrite existing files. Of course, if you ever accidentally delete or overwrite files on your local computer, you always can use your Web site files as a backup.

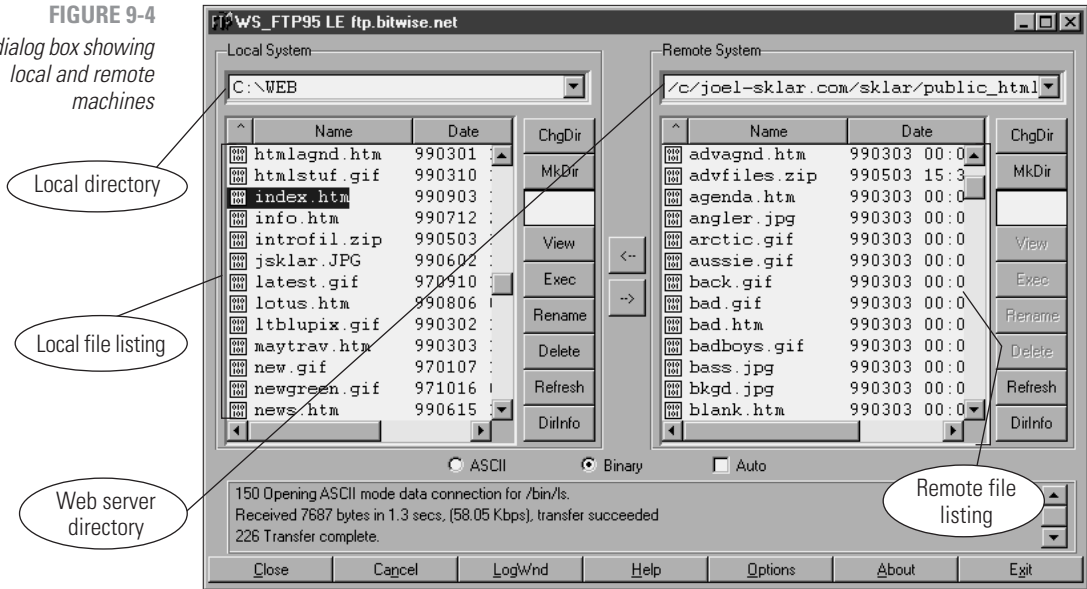
FIGURE 9-3

FTP connection settings



Once the FTP client has connected to the Web server, you have the option of choosing the files you want to transfer. The FTP client usually displays directories on both the local and remote computers. Figure 9-4 shows the FTP client with both local and remote system information.

FIGURE 9-4
FTP dialog box showing
local and remote
machines



Select the files that you want to upload in your local directory listing and transfer them to the Web server. You also can transfer files from the Web server to your computer. The first time you go live with your Web site, you must transfer all the files. Later you will need to upload only the files that you have updated. Once the files have reached the Web server, they are available for access immediately on the Web.

After you find an ISP and publish your Web site to the World Wide Web, it is time to test your Web site in the real-life Internet environment.

TESTING YOUR WEB SITE

TIP

Make sure that you maintain the exact directory structure on the Web server that you used on your development computer to ensure that all relative file paths are correct. You can read more about this in Chapter 3.

Even though you tested throughout the development of your Web site, you need to continue testing after you post your files live on the Web. If possible, load your files to the Web server and test them before making your URL available for users to access the Web site. If you have enough server space, you may want to establish a testing area on the Web site. You can do this by creating a subdirectory in your public HTML directory. Do not publicize the URL so that your testing area can remain private.

TESTING CONSIDERATIONS

If you are testing from the same machine on which you developed the Web site, make sure to clear your cache. (Refer to the instructions in Chapter 1 for details on clearing your cache.) When you clear the cache, the browser has to retrieve all of the Web site's files from the server, re-creating the experience of a first-time

visitor to your Web site. Always test in as many different environments as possible. Remember to test for the following Web design variables:

- Multiple browsers — Test in as many browsers as you can to make sure your work is portable and displays consistently.
- Multiple operating systems — If you can, test on different operating systems. If you have a PC as a development machine, use a Macintosh for testing, and vice-versa. You even can run different versions of UNIX on a PC, if necessary. Because computer chip development moves at lightning pace, machines become outdated quickly. You can find discounted and used machines that often are Internet-capable as long as they have an updated modem. Remember, these machines will not be used to develop Web sites, so you do not need the latest or most powerful hardware.
- Connection speeds — Do not rely on the same connection speed when testing your Web site, especially if you work in a corporate environment where the connection to the Internet usually is faster than the average user's. Go to a friend's house, library, or Internet café and access your Web site from there. Test for download times at different connection speeds. According to Wired News (www.wirednews.com), 33% of Web users will leave a Web site if a page takes longer than eight seconds to load. Make sure your pages download quickly.
- Display types — Test at different screen resolutions and color-depth settings to make sure your colors display consistently. Make sure to test different color depths: 8-bit 256 color, 16-bit high color, and 24-bit true color.

In addition, continually test your links. Click through all the links on your Web site, making sure every one takes the user to the intended destination. Any pages that link outside of your Web site need to be tested on a regular basis to make sure that the destination site has not moved, shut down, or posted content different from what you expect.

USER TESTING

User testing can be as simple as asking a few colleagues to look at your Web site, or as complex as conducting extensive formalized testing. Some companies invest in special user testing labs with videotaping and one-way mirrors to record user behavior, or software that can track a user's mouse movements and eye coordination as they look at your Web site. Even if you do not need this level of complexity, you should perform some type of user assessment of your work. The goal of user testing is to determine if your Web site is easy to navigate and provides easy access to content. Following are some considerations to make when planning for user testing of your site.

VARY YOUR SUBJECTS

Draw your test subjects from a variety of backgrounds, if possible. Gather test subjects that are representative of your target audience. Find users with varying computing skills and familiarity with the information. Avoid using friends as test users, as they only may compliment your work. You might choose to let users

look at the Web site on their own time, but you can learn a lot by watching users interact with your Web site. Make sure to let them navigate and use the Web site without any outside help from you. Just stand back and watch.

FORMALIZE YOUR TESTING

Formalize your testing by creating replicable methods of testing your Web site. Prepare a series of questions that users have to answer after viewing the Web site. Give them a specific task to complete or have them find a particular piece of information. Let them rate the ease of completing such asks. Compare the results from different users to find any problem areas in navigation. Administer the same testing methods to a variety of users, and watch for trends and consistencies. This lets you compare results or focus on a particular feature of the Web site.

DEVELOP A FEEDBACK FORM

Develop a feedback form that users can fill out after they have tested the Web site. Include a set of criteria and let them rate the Web site on a progressive scale, or ask them a series of open-ended questions. You also may want to provide the feedback form online, letting users offer feedback directly from the Web site. Here are some sample questions you might ask.

- Did you find the information you needed?
- Was it easy or difficult to access the information you needed?
- Did you find the Web site visually attractive?
- Did you find the content easy to read?
- Did you find the Web site easy to navigate?
- Did you think the information was presented correctly?
- Did the information have enough depth?
- What area of the Web site did you like the best? Why?
- What area of the Web site did you like the least? Why?
- Would you recommend the Web site to others?

REFINING AND UPDATING YOUR CONTENT

Refine your content and presentation based on your user's feedback. When you are evaluating user feedback, look for trends rather than individual aberrations, such as one person's vehement dislike of your color scheme. Pay particular attention to the ease of access to your information. Users should be able to find what they want quickly.

If you have a commercial site, ask your system administrator to set up a program that analyzes your visitors and their preferences when they visit. This type of reporting program, available on most Web servers, reads the communication logs created by the server and extracts information in a report format. These statistical reports vary from program to program, but they can tell you how often users visit, which pages they request the most, and how your Web site traffic varies from month-to-month.

Plan for ongoing maintenance of your Web site. This is an area often neglected in the initial design and budgeting for a Web site, but it is vital to the success of the Web site. Plan to add new links, information, and featured content continually. The Web is a live, immediate medium, and you want your Web site to reflect that immediacy by keeping it fresh. Test your links to other Web sites regularly to make sure they are active. You will annoy your users if you send them to linked content that no longer exists. When you update your pages, let users know by including update information on your top-level page or on any page that promises up-to-date information.

Plan for major Web site design changes on a regular basis. Some Web sites reorganize their look on a yearly basis. You can be performing ongoing testing and improving to your test site while you still are maintaining your live Web site. Pay attention to the trends in the industry by visiting lots of other Web sites. Consider new technologies as they become available and when the bandwidth or browser variables allow you to incorporate them.

ATTRACTING NOTICE TO YOUR WEB SITE

After you set up your live Web site, it is time to attract visitors. With the millions of pages on the Web, it can be difficult to get your Web site noticed. It is likely that you are trying to attract specific users to your site—people who use your product or who are interested in the same information. Within this narrow audience, publicize your URL as much as possible, in every collateral medium that you can, including business cards, letterheads, catalogs, mailings, and other media. Give users a reason to visit your Web site by giving them something they cannot get in any other medium, such as up-to-the-minute pricing or technical information. Give them a reason to come back to your Web site by making your information accessible and useful.

WORKING WITH SEARCH ENGINES

Other than knowing your URL, consider how visitors will find your Web site. Many who are interested in a specific topic or information will use a **search engine** Web site to look for sites on a related topic. Search engines are software programs that search out and index Web sites in a catalog. Not all search engines are alike, so the way they search and catalog differs greatly. You can enhance your Web site to take advantage of search engine behavior. Although these tips can help, there is no guarantee that your Web site will rise to the top of a search engine listing.

For more information on search engine details, visit the Web site www.searchenginewatch.com. Especially interesting is their chart of how search engines display results at www.searchenginewatch.com/webmasters/display.html.

USE MEANINGFUL TITLES

All the pages of your Web site need pertinent information in the <TITLE> element. Some search engines read only the contents of the <TITLE> for Web site information. Also, the contents of the <TITLE> show up in the user's bookmarks

or favorites list. Make sure to use meaningful titles that provide information to the user and accurately reflect your site.

USING <META> ELEMENTS

You can use the <META> elements on your Web site to raise your Web site listing with certain search engines. The <META> tags will get you results with AltaVista, Excite, Inktomi, and HotBot, but other search engines ignore them completely.

<META> Element Syntax

The <META> element is an empty element that resides in the <HEAD> section of the HTML document. <META> allows you to specify information about a document that is invisible to the user. Certain programs, such as search engines, can use this information for document cataloging. <META> uses both NAME and CONTENT attributes, among others. The NAME attribute lets you specify a document property, such as “description” or “keywords.” The CONTENT attribute contains the property’s value. Table 9-1 lists the most commonly used NAME attribute values.

TABLE 9-1
*<META> NAME
attribute values*

NAME Attribute Values	Description
Author	The author of the page
Description	A short text-based description of the content or the Web site
Keywords	A comma separated list of keywords that are potential search terms a user might use to find your site
Generator	This name and version generated by page-authoring programs

The following code shows an example of the <META> elements in use:

```
<HTML>
<HEAD>
<META NAME="description" CONTENT="Joel Sklar Consulting -
Specializing in Course Development and Delivery on Web-
related topics">
<META NAME="keywords" CONTENT="Joel, Joel Sklar, Sklar,
HTML, XML, Web, Course Design, Course Development,
Technical Training, HTML Links, XML Links, CSS, Cascading
Style Sheets, HTML Resources, XML Resources">
</HEAD>
```

Notice that the code uses one <META> element for each NAME and CONTENT attribute pair. The description property contains a short description of the Web site. The keywords property contains a list of potential search terms that the user might request.

BE CAREFUL WITH FRAMES

Avoid using a frameset at the top level of your Web site if at all possible. Because frameset files contain no content, they lack the information that many search engines look for. If you need to use frames at the top level of your Web site, make sure to use both <META> tags and information in the <NOFRAMES> element, as described in Chapter 8. Many search engines read the contents of <NOFRAMES> if they encounter a frameset. Here is an example of a frameset with appropriate <META> and <NOFRAMES> content.

```
<HTML>
<HEAD>
<TITLE>Joel Sklar Consulting - Main Page</TITLE>
<META name="description" content="Joel Sklar Consulting -
Specializing in Course Development and Delivery on Web-
related topics">
  <META name="keywords" content="Joel, Joel Sklar, Sklar,
HTML, XML, Web, Course Design, Course Development,
Technical Training, CSS, Cascading Style Sheets, HTML
Resources, XML Resources">
</HEAD>
<FRAMESET COLS="150,*">
<FRAME SRC="NAVCOL.HTM">
<FRAME SRC="ARTICLE1.HTM" NAME="CONTENT">
<NOFRAMES>
<BODY>
The Joel Sklar Consulting Web site is a resource for HTML
authors and students.
<P>
You can view a <A HREF="index2.htm">non-framed</A> version
of the site.
</P>
</BODY>
</NOFRAMES>
</FRAMESET>
</HTML>
```

Notice that the <NOFRAMES> code includes a link to a non-framed version of the Web site.

USE ALT TEXT WITH IMAGES

Always add ALT information to all of the graphics on your page. Some search engines read the contents of the ALT attribute, which is especially useful if you start your page with a graphic. Refer to Chapter 7 for more information on the ALT attribute.

SUBMIT URLS TO SEARCH ENGINES

One way to have search engines list your URL is to visit each of the popular search engine sites and submit your URL. The site's search engine will search

your Web site and index the information. Periodically return to the search engine site and search for your Web site name or pertinent search terms. Some search engines are much faster at this process than others, so you may have to resubmit your URL if you do not see your page listed.

SUMMARY & REVIEW

- Publishing your Web site involves transferring files to a Web server. Internet Service Providers (ISPs) provide space on their Web server for their subscribers. You can use a File Transfer Protocol (FTP) application to transfer the files.
- Shop carefully and compare features when you are looking for an ISP or Web host. Consider the future disk space and technology needs of your content.
- Download and learn to use an FTP client. Because you transfer files to your Web site often, you need to know how to do this.
- After your Web site is live, test it against the basic Web variables of browser, operating system, display resolution, and connection speed.
- Test your Web site with a variety of users. Listen carefully to their feedback to determine trouble spots in your information design.
- Plan for the maintenance, upkeep, and redesign of your Web site. Keep your content up-to-date. Let users know when you have made updates to the Web site.
- To take advantage of search engine behavior, enhance your Web site by using meaningful titles, including <META> elements, avoiding a frameset at the top level of your Web site, using ALT attribute text with images, and submitting your URLs to search engines.

REVIEW QUESTIONS

1. How does a Web site become live?
2. What is the difference between an Internet Service Provider (ISP) and a Web hosting service?
3. What is a Point of Presence (POP)?
4. What is the Secure Socket Layer (SSL)?
5. What is streaming multimedia technology?
6. Why would you need to use a Common Gateway Interface (CGI) script?
7. How will you recreate a first-time user's experience when you are testing your Web site?
8. List the four variables to consider when testing your Web site.
9. Describe why it is helpful to vary your user testing subjects.
10. What are the benefits of formalizing user testing?
11. What aspect of Web site maintenance often is overlooked?
12. What is a search engine?
13. Where does the content of the <TITLE> element appear to the user?
14. What are the two most common attributes of the <META> element?
15. Why are frames a problem for search engines?
16. List two methods that help search engines with framed Web sites.

PROJECTS

1. Browse the Web for Internet Service Providers and Web hosting services. A good place to start is The List Web site (*thelist.Internet.com*).
 - a. Find three different ISPs in your area.
 - b. Prepare a comparison chart listing the major features and drawbacks of each ISP. Include information on pricing options.
 - c. Choose the ISP you would use and explain why.
2. Download a shareware FTP program from the Web and set it up on your computer.
3. Write a test plan for your Web site.
 - a. Create a section for each design variable.
 - b. Spell out the exact steps of the test and the different variables that will be tested. State explicitly which browsers and version should be used, and on which operating system. Detail the different screen resolutions and connection speeds. List the exact pages that should be tested.
 - c. Walk through the test procedure to test its validity.
4. Write a sample user feedback questionnaire.
5. Write a maintenance plan for your Web site.
 - a. Include a schedule of content updates for the different sections of the Web site.
 - b. Include a schedule of design reviews.
 - c. Plan for link maintenance.
6. Visit some of the more popular Web search engines, such as AltaVista, Lycos, Excite, etc. Using each Web site's Help features, try to determine the best methods you can use to get each search engine to index your Web site properly.

CASE STUDY

If you have access, publish your Web site to the Web using an FTP client. (If you cannot post your Web site to the Web, make it available on your computer.) Prepare for a round of user testing. Create a user feedback form and perform user testing on your Web site. Enlist six to ten people to review the Web site and fill out the form. Compile the results and write a paper detailing the results of the testing and what they indicate about the effectiveness of your design. Point out areas that you feel could benefit from the user recommendations. Be sure to list any assumptions you made about the Web site and how users either confirmed or denied these assumptions.